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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/700,566	11/16/2000	Masami Ueda	F-6690	6006

7590 04/09/2003  
Jordan and Hamburg  
122 East 42nd Street  
New York, NY 10168

EXAMINER

COMBS, JANELL A

ART UNIT	PAPER NUMBER
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1742

DATE MAILED: 04/09/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/700,566

Applicant(s)

UEDA ET AL.

Examiner

Janelle Combs-Morillo

Art Unit

1742

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 07 January 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution-as-to-the-merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,3 and 4 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3 and 4 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 13, 14
- 4) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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2. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Floreen et al (US 3,532,491).

Floreen teaches a maraging steel comprising (in weight%): 17.3% Ni, 2.1% Mo, 12.0% Co, 0.12% Ti, 0.11% Al, 0.010% C, balance Fe (see example 1 in Table IV), which falls within the instant composition ranges. Floreen broadly teaches said maraging steel comprises (in weight%): 14-22% Ni, 0.9-4% Mo, 12.0-25% Co, up to 0.4% Ti, up to 0.4% Al, up to 0.15% C, balance Fe (column 10 lines 28-27).

Concerning the instant nitrogen and oxygen ranges, Floreen teaches elements such as nitrogen and oxygen should be kept to "low levels" consistent with good commercial steel making practice (column 3 lines 48-49). Therefore the instant ranges are held to be within the disclosure of Floreen.

Concerning the instant microsegregation ratio, Floreen teaches that segregation of molybdenum and titanium lead to "an undesirable loss in tensile ductility and toughness (ability to absorb impact energy)" (column 1 lines 48-50), and that in the maraging steels taught by Floreen segregation can be "greatly minimized, indeed obviated" (column 3 lines 12-13) and said steels are "substantially devoid of detrimental segregation effects" (column 3 lines 28-29), and

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exhibit improved toughness, when the composition contains the ranges of elements as stated above. Therefore, because Floreen teaches an overlapping alloy composition that is substantially devoid of Mo and Ti segregation effects, the maraging steels taught by Floreen are held to have a segregation ratio within the instant ranges. It is held that Floreen has created a prima facie case of obviousness of the presently claimed invention.

3. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over JP 49-009465 A (JP'465).

JP'465 teaches a maraging steel with a composition comprising (in weight%): 18-24% Ni, 0-13% Co, 0-6% Mo, 0-3% Ti, 0-1% Al, <0.3% total impurities including <0.04% O, balance Fe (see abstract, etc.), which overlaps the instant alloy composition. Overlapping ranges have been held to be a prima facie case of obviousness, see MPEP § 2144.05, *In re Best* 195 USPQ 430, *In re Malagari*, 182 USPQ 549, *In re Titanium Metals Corporation of America v. Banner*, 227 USPQ 773 (Fed. Cir 1985), *In re Woodruff*, 16 USPQ 2d 1934, and *In re Wertheim*, 541 F.2d 257, 191 USPQ 90 (CCPA 1976).

JP'465 teaches that a process of forging, heating, quenching, machining, and aging said alloy is able to control the inclusion defects to  $\leq 2 \mu\text{m}$  (abstract). Because JP'465 teaches an overlapping alloy composition, as well as an inclusion size well within the instant ranges, it is held that JP'465 has created a prima facie case of obviousness of the presently claimed invention.

4. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over JP 49-009465 A (JP'465) in view of Floreen et al.

As stated above, JP'465 teaches that a process of forging, heating, quenching, machining, and aging said alloy is able to control the inclusion defects to  $\leq 2 \mu\text{m}$  (abstract).

Floreen teaches a maraging steel comprising (in weight%): 14-22% Ni, 0.9-4% Mo, 12.0-25% Co, up to 0.4% Ti, up to 0.4% Al, up to 0.15% C, balance Fe (column 10 lines 28-27), with nitrogen and oxygen kept to low levels consistent with good commercial steel making practice (column 3 lines 48-49), which substantially overlaps the instant composition ranges.

Concerning the instant microsegregation ratio, Floreen teaches said steel is "substantially devoid of detrimental segregation effects" (column 3 lines 28-29), when the composition contains the ranges of elements are as stated above.

It would have been obvious to one of ordinary skill in the art to perform the process taught by JP'465 of forging, heating, quenching, machining, and aging said alloy in order to control the inclusion defects to  $\leq 2 \mu\text{m}$  (abstract), on the maraging steel alloy taught by Floreen to be substantially devoid of detrimental segregation effects, because Floreen teaches that segregation of molybdenum and titanium lead to "an undesirable loss in tensile ductility and toughness (ability to absorb impact energy)" (column 1 lines 48-50) and the absence of said segregation leads to improved toughness and mechanical properties (column 3 lines 15-20).


### *Conclusion*

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Janelle Combs- Morillo whose telephone number is (703) 308-4757. The examiner can normally be reached Monday through Friday from 7:30am to 5:00pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King, can be reached on (703) 308-1146. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9310.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

  
GEORGE WYSZOMIERSKI  
PRIMARY EXAMINER

jcm 

April 7, 2003